

GP 1655-

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant:

J. GERSHONI

Serial No.: 09/297,668

Filed: May 7, 1999

For: DETERMINATION AND CONTROL
OF BIMOLECULAR INTERACTIONS

Examiner: B. Forman



Abstract

Group Art Unit: 169

Attorney

Docket: 27/135

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

RESPONSE

Sir,

This is in response to the United States Patent and Trademark Office Action mailed August 21, 2000, which response is being made on or before November 21, 2000, and for which no extension fees are due. The Office Action includes a request for election or restriction. In addition, preliminary amendments in the claims are requested as part of the response.

AMENDMENTS

In the claims:

137. (Amended) A method for preparing a conformational peptide of a discontinuous epitope of a single biological unit of an organism, the method comprising the steps of:

- See*
- (a) providing a plurality of DNA fragments corresponding to at least a portion of a genome of the organism by means selected from the group consisting of:
- (i) synthesizing said plurality of DNA fragments corresponding to said at least a portion of [a] said genome of the organism; (ii) digesting said at least a portion of [a] said genome of the organism to form [a] said plurality of fragments, said portion of said genome coding for the biological unit;
- (b) ligating said plurality of fragments to form at least one ligated fragment;
- (c) at least partially digesting said at least one ligated fragment to form a plurality of conformational fragments for coding for the discontinuous epitope of the single biological unit, thereby forming said discontinuous library;
- (d) inserting said discontinuous library into an expression system; and
- (e) obtaining the conformational peptide from said expression system.
- b*

REMARKS

Election/Restriction

Claims 112 through 143 are pending in this case. The examiner requires restriction under 35 USC 121 and 372. The examiner has divided claims 112 through 143 into IV Groups and has requested election according to 37 CFR 1.499.

In accordance with the examiner's request, the applicant elects Group IV (claims 137-143) for examination at this time. No claims in this group depend from claims not in Group IV.

Amendment to claim 137

Claim 137 pertains to "A method for preparing a conformational peptide of a discontinuous epitope of a single biological unit of an organism". The claim as originally submitted included as its first step:

" digesting at least a portion of a genome of the organism to form a plurality of fragments, said portion of said genome coding for the biological unit"

Subsequent steps relate to ligation, re-digestion, insertion into an expression system and obtaining the conformational peptide from said expression system. Upon reflection, the applicant has realized that the term "digesting" is a potential source of confusion. The applicant's intention has always been, and remains, to refer to preparation of " a summation or condensation of a body of information" which is the first definition of digest (noun) according to Webster's Collegiate Dictionary (© 1997 by Merriam-Webster, Incorporated). The transitive verb digest is similarly defined as " to distribute or arrange systematically" and also as " to take into the mind or memory; especially : to assimilate mentally.

However, since the present invention will be primarily of interest to biological scientists, there is every likelihood that the term "digestion" will be interpreted as " to

soften, decompose, or break down by heat and moisture or chemicals", wherein the chemicals most often considered as relevant in the art of biology are enzymes. Such an interpretation would severely limit the scope of the claimed invention, although it is definitely included within the scope of the invention.

Therefore, in order to more clearly define the metas and bounds of the present invention, the first step of claim 137 has been amended to:

- (a) providing a plurality of DNA fragments corresponding to at least a portion of a genome of the organism by means selected from the group consisting of:
 - (i) synthesizing said plurality of DNA fragments corresponding to said at least a portion of [a] said genome of the organism;
 - (ii) digesting said at least a portion of [a] said genome of the organism to form [a] said plurality of fragments, said portion of said genome coding for the biological unit;

The applicant would like to point out that "synthesizing said plurality of DNA fragments corresponding to said at least a portion of said genome of the organism" necessarily includes "digestion" in the sense of "a summation or condensation of a body of information", whether that "summation or condensation" is conducted by a human being or by a computer. As such, the amendment to claim 137 does not introduce new material into the claim.

Further, the idea of digestion without enzymes is clearly explained in the specification (page 24; line 6):

" Optionally, such a digest could be prepared by mechanical shearing of the DNA."

In addition, the idea of direct synthesis, as opposed to digestion, is clearly present (page 23; lines 4-7):


" One method involves synthesizing peptides, such that each peptide is offset from the next by one residue. These peptides can be synthesized in a variety of ways including, but not limited to, artificial production by a peptide synthesizing machine."

Although the above referenced method refers to synthesis of peptides, cloning of synthetic oligonucleotides is referred to (page 26; lines 6 and 7):

" Alternatively, oligonucleotide linkers can be used to clone the DNA fragments..."

Those ordinarily skilled in the art are accustomed to synthesizing oligonucleotides for cloning of libraries, (e.g. Greenwood, J., Willis, A.E. and R.N. Perham, J. Mol. Biol., 1991, 220:821-827; and Willis, A.E., Perham, R.N. and D. Wraith, Gene, 1993, 128:79-83) cited on page 37; lines 10-12. This method can only be employed when the sequence is known. There is therefore still a need for enzymatic digestion in cases where the sequence is unknown.

Respectfully submitted,



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